

REMARKS

Applicant thanks the Examiner for the thorough consideration given the present application. Claims 1-9 and 11 are currently being prosecuted. Claims 1-6 and 9 stand rejected. Claims 7 and 8 stand withdrawn. The Examiner is respectfully requested to reconsider his rejections and restriction requirement in view of the amendments and remarks as set forth hereinbelow.

ELECTION OF SPECIES REQUIREMENT

The Examiner's Election of Species Requirement has been made final. It is respectfully requested that the Examiner reconsider his Election of Species Requirement. It is respectfully submitted that independent claim 1 is a generic claim and is now in condition for allowance. Claims 7 and 8 are directed to species claims. In view of the fact that claim 1 is allowable and claims 7 and 8 depend from claim 1, the Examiner should withdraw the Election of Species Requirement and proceed to allow all of the claims of the present application. The Examiner is respectfully requested to reconsider his election of species requirement. If the Examiner does persist in his election of species requirement and does not allow a generic claim that would then permit all of the claims to be allowed in the present application, Applicant reserves the right to file divisional applications directed to the non-elected claims at a later date if he so desires.

OBJECTION TO THE CLAIMS

Claims 1, 12, 13, 14 and 17 stand objected to by the Examiner. As the Examiner will note, claims 12-14 and 17 have been cancelled. Claim 1 has been amended to delete the phrase "an associated pair of body segments" which was objected to by the Examiner. In addition, claim 1, line 29 has been amended to change "portions" to – fingers --. The Examiner's objections have been obviated.

REJECTION UNDER 35 USC 102

Claims 13, 14 and 17 stand rejected under 35 USC 102 as being anticipated by Olson, US. 2,155,734. This rejection is respectfully traversed.

Although not conceding the appropriateness of the Examiner's rejection, but merely to advance the prosecution of the present application, claims 13, 14 and 17 have been cancelled. The Examiner's rejection based on 35 USC 102 has been obviated.

REJECTIONS UNDER 35 USC 103

Claims 1-3, 5, 6 and 10-12 stand rejected under 35 USC 103 as being obvious over Olson '734 in view of Droske, US 3,969,915 and Gysin, US 3,264,852. Claim 4 stands rejected under 35 USC 103 as being obvious over Olson '734 in view of Droske, US 3,969,915 and Gysin, US 3,264,852 and further in view of Vonlanthen, US 5,956,986. Claim 9 stands rejected under 35 USC 103 as being obvious over Olson '734 in view of Droske, US

3,969,915 and Gysin, US 3,264,852 and further in view of Widen, US 5,809,816. These rejections are respectfully traversed.

Although not conceding the appropriateness of the Examiner's rejection, but merely to advance the prosecution of the present application, claims 10 and 12-18 have been cancelled. The Examiner's rejections of claims 10 and 12-18 based on 35 USC 103 have been obviated.

The Olson '734 patent teaches a lock and key with positive spring pressure causing the two tumblers in one cavity to contact different surfaces of the key biting. One of the tumblers contacts the top of the biting, and the other tumbler contacts the bottom of the biting.

On page 4, the last six lines of the paragraph of the Examiner's Office Action that continues over to page 5, it is indicated that the Examiner considers it obvious to modify the tumbler pair of Olson '734 to include a separate spring for each tumbler, wherein the springs contact only one tumbler, and the tumblers are elevationally movable independently of each other in the same cavity in view of the Droske patent.

It is respectfully submitted that the construction of the spring 21 in the Olson '734 patent is for biasing the plates 18, 19 so that the plates 18, 19 are biased outwardly for locking engagement in the groove 9. More specifically, as set forth on page 2, column 1, lines 1-12:

"The plates each have a longitudinal recess or central aperture 20 which register laterally to form a pocket for receiving a coiled wire tumbler spring 21. Thus the spring is compressed longitudinally between the ends of the apertures, and serves

to press the plates outwardly from the plug in opposite directions for locking engagement in the grooves 9 to prevent the rotation of the plug. The separation of the plates is stopped when the apertures are in registration and the two plates become a tumbler which is longer than the diameter of the plug.”

It is respectfully submitted that the springs 21 provide a connection between the plates 18, 19 to permit the plates 18, 19 to be biased into the grooves 9 to prevent the rotation of the plug. The proposed modification of the Olson ‘734 patent to replace the one spring 21 with two springs as apparently disclosed in Droske would render inoperative the lock tumblers of Olson ‘734. How would the plates 18, 19 be moved to be flush with the surface of the plug in the unlocked position. See, the Olson ‘734 patent, page 1, column 2, lines 49-55.

The Droske patent is a lock of an entirely different class of lock construction. The tumblers do not contact an internal portion of the key biting. The tumblers of Droske fit against opposing sides of the top and bottom surfaces of the key blade. In view of the dissimilarities in design, it is respectfully submitted that one of ordinary skill in this art would not modify the Olson ‘734 patent as suggested by the Examiner. More specifically, the Droske patent is directed to a conventional lock wherein the tumblers are not side tumblers. The wafer tumblers are located centrally and are provided with a central hole through which the key blade extends. See, Figs. 2, 3 and 6. In the Droske patent the contact portions are not in the form of contact fingers that extend sideways into the key slot and there are no contact portions of contact fingers facing in the same direction. In addition, in the Droske patent the contact portions interact with the upper and lower edges of the key blade and not with a

coded surface on a side surface of the key blade. Further, in the Droske patent the side tumblers are not accommodated and guided in side cavities. Any prior attempts to combine two tumblers with projecting fingers for contacting the key into one cavity have resulted in linking the tumblers together with a spring.

The Gysin patent discloses a lock having side tumblers with inwardly spaced contact portions. However, the tumblers in a pair are located on opposite sides of the key slot and not on the same side. In addition, the contact portions in a pair are not axially separated. Gysin does not teach a pair-wise arrangement of a pair of tumblers in the same side cavity on the same side of the key slot. More specifically, each pair of tumblers includes two body segments located on opposite sides of the key slot. Each pair of tumblers is located on a respective side of the key slot, not on the same side thereof. In addition, Gysin does not disclose a pair of adjacent body segments accommodated in an associated side cavity. Further, in the Gysin patent on each side of the key slot the adjacent side tumblers are accommodated and guided in separate side cavities. See, Fig. 4.

The claims of the present invention are directed to a combination of elements wherein a cylinder lock (1) and key (2) combination are provided wherein the key (2) comprises a key blade (200) having, at a side surface (201) thereof, a longitudinally extending coded surface (203) with longitudinally spaced code surface portions each representing an element of a key code

the cylinder lock (1) comprises

- a cylinder shell (140),
 - a key plug (130) which is rotatably mounted in said shell,
 - a longitudinal key slot (100) extending along said key plug in parallel to the rotational axis thereof for receiving said key blade (200) ,
 - at least two side tumblers (113, 114) in said key plug for locking said key plug against rotation relative to said cylinder shell, unless a correctly coded key is inserted into said key slot, each side tumbler being provided with a contact finger (115, 116) reaching sideways into said key slot so as to engage with said coded surface (203) of a properly shaped key blade being inserted into said key slot, and
 - at least one side cavity (120) located at a transversal side of said key slot (100) in said key plug (130), said at least one side cavity accommodating and guiding said side tumblers for elevational movement therein,
- wherein the at least two side tumblers are distributed pair-wise, with two adjacent side tumblers (113, 114) located in a respective side cavity on the same side of said key slot,
- the adjacent side tumblers (113, 114) in each pair being linearly guided but independently movable in the respective side cavity so as to be individually displaced into respective elevational positions, and
- the contact fingers (115, 116) on the adjacent side tumblers in each pair having contact portions facing in the same direction and being axially separated in the longitudinal direction of the key plug such that these contact fingers are located at a longitudinal distance

from each other on the same side of said key slot and will be positioned at elevationally specific and generally different code levels when being engaged by two neighbouring, longitudinally spaced code surface portions (204, 205) of said coded surface (203) upon insertion of said key blade (200) into said key slot (100),

- whereby the at least two side tumblers (113, 114) are displaceable, upon insertion of said key blade into said key slot, into individually specific elevational code positions, and each set of such elevational code positions representing a different key code with an increased number of code elements, a pair of side tumblers corresponding to two code elements.

The Vonlanthen patent was merely relied upon for a teaching of a part-cylindrical shape 10 that is guided by wall portions of the cavities. The Widen '816 patent was merely relied upon for a teaching of a side bar. Since the secondary teachings relied on by the Examiner do not overcome the deficiencies of the primary references, the claims of the present application is not rendered obvious in view of the disclosure as set forth in the prior art relied on in the Examiner's rejections.

REQUEST FOR INTERVIEW

If the Examiner has any questions with regard to this application, he is respectfully requested to contact the undersigned at (703) 205-8000 so that an interview can be arranged in connection with this application.